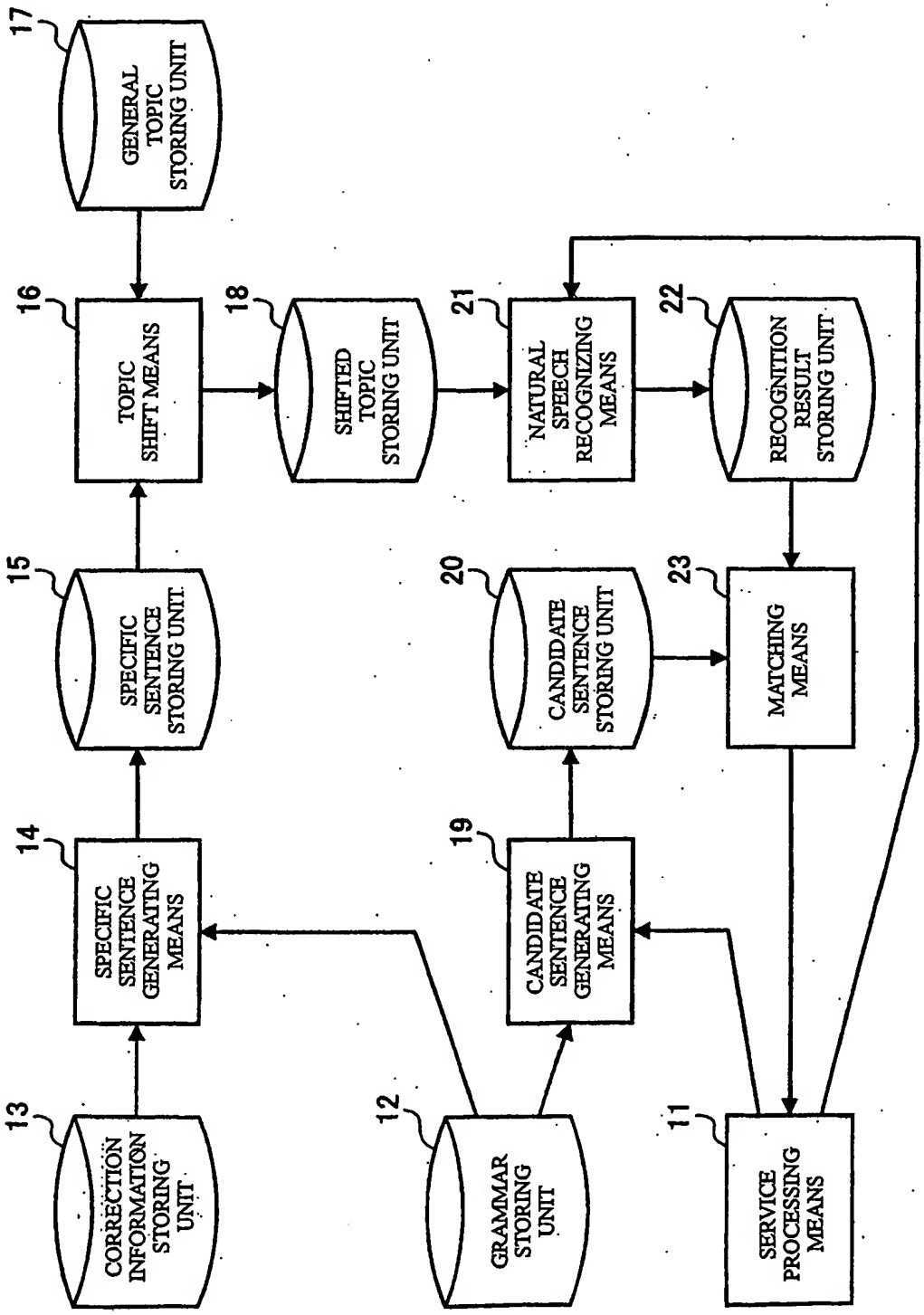
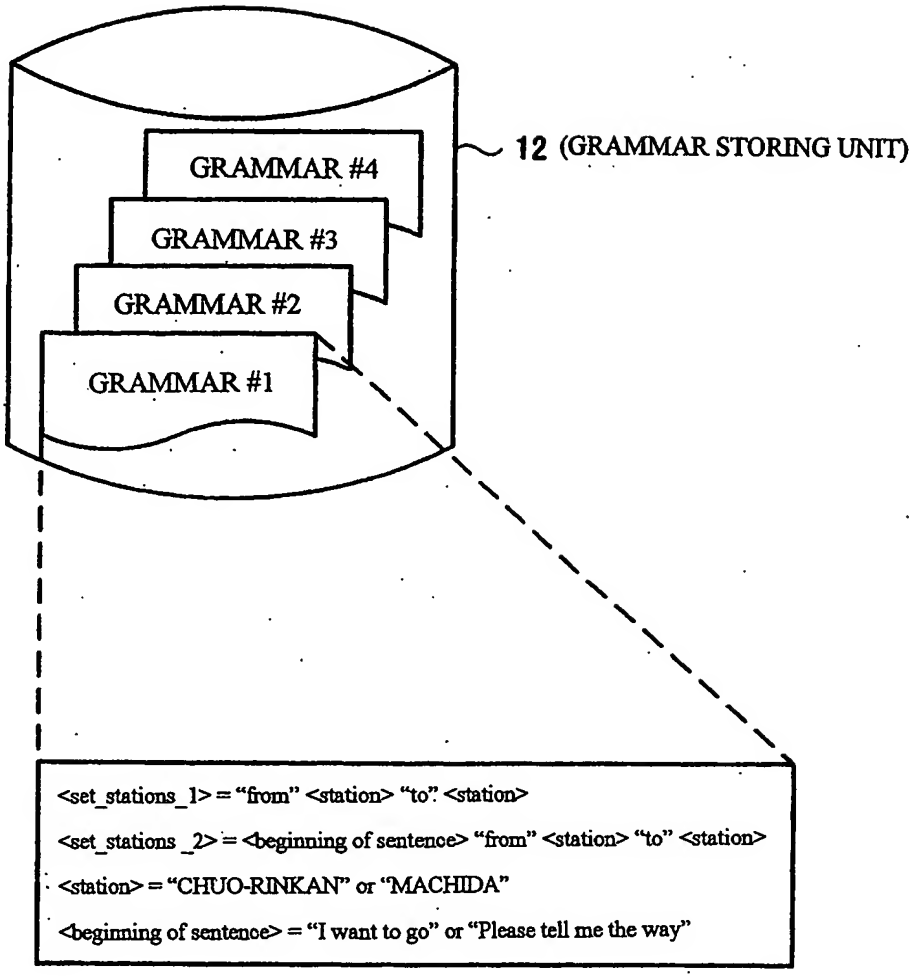
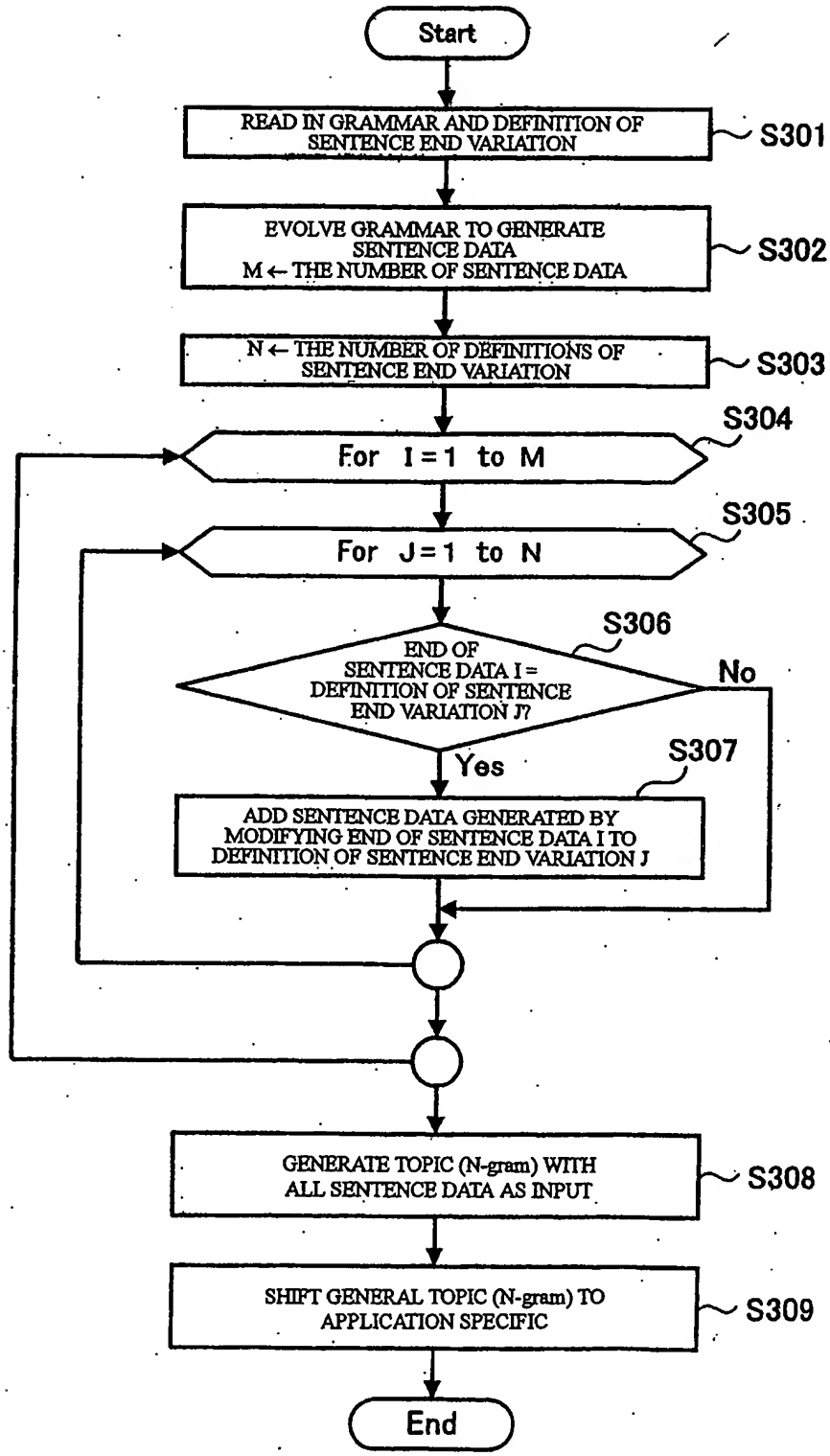
[Figure 1] (1/10)


17
GENERAL TOPIC STORING UNIT
16
TOPIC SHIFT MEANS
18
SHIFTED TOPIC STORING UNIT
21
NATURAL SPEECH RECOGNIZING MEANS
22
RECOGNITION RESULT STORING UNIT
15
SPECIFIC SENTENCE STORING UNIT
20
CANDIDATE SENTENCE STORING UNIT
23
MATCHING MEANS
14
SPECIFIC SENTENCE GENERATING MEANS
19
CANDIDATE SENTENCE GENERATING MEANS
13
CORRECTION INFORMATION STORING UNIT
12
GRAMMAR STORING UNIT
11
SERVICE PROCESSING MEANS

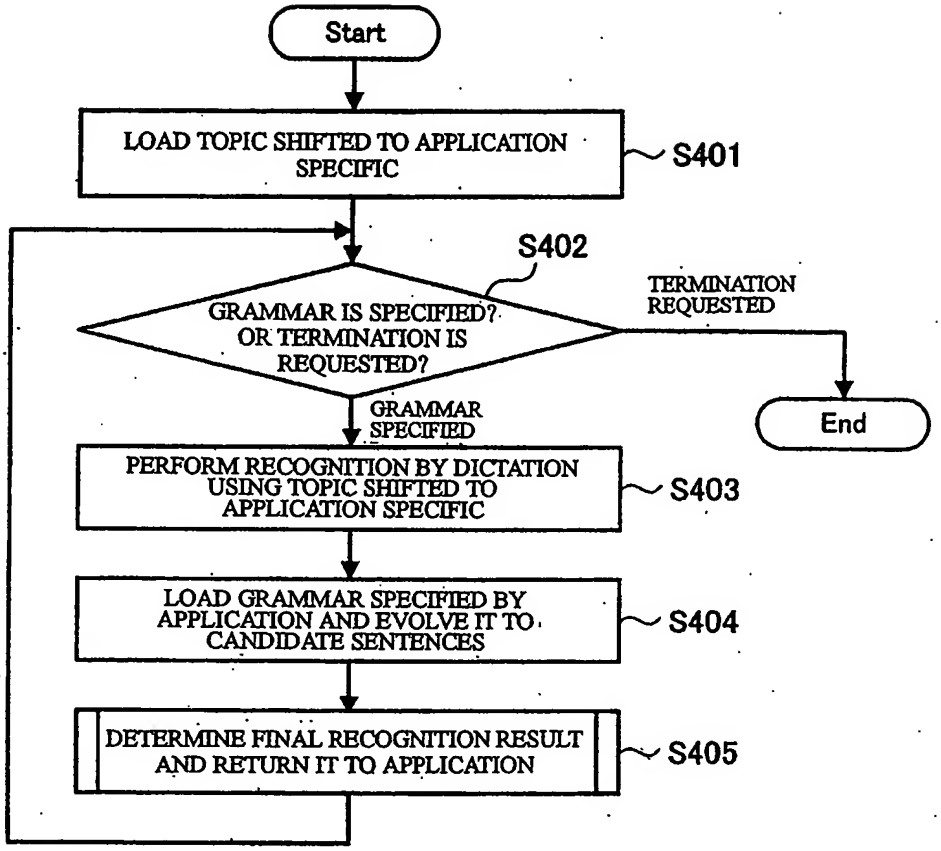
[Figure 2] (2/10)


GRAMMAR #4
GRAMMAR #3
GRAMMAR #2
GRAMMAR #1
12 (GRAMMAR STORING UNIT)
<set_stations_1> = "from" <station> "to" <station>
<set_stations _2> = <beginning of sentence> "from" <station> "to" <station>
<station> = "CHUO-RINKAN" or "MACHIDA"
<beginning of sentence> = "I want to go" or "Please tell me the way"

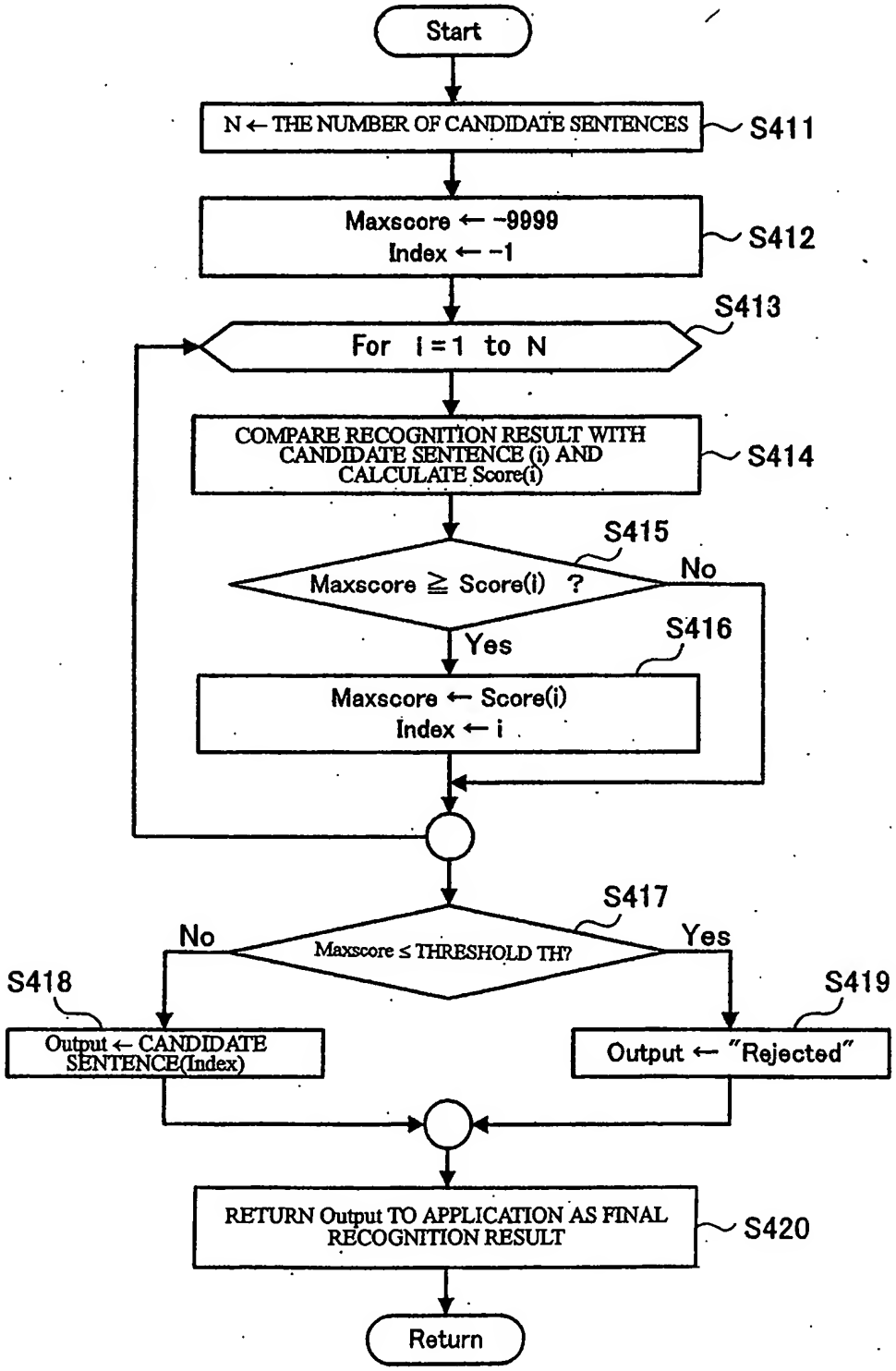
[Figure 3] (3/10)


Start
READ IN GRAMMAR AND DEFINITION OF SENTENCE END VARIATION
S301
EVOLVE GRAMMAR TO GENERATE SENTENCE DATA
M ← THE NUMBER OF SENTENCE DATA
S302
N ← THE NUMBER OF DEFINITIONS OF SENTENCE END VARIATION
S303
S304
For I = 1 to M
S305
For J = 1 to N
S306
END OF SENTENCE DATA I = DEFINITION OF SENTENCE END VARIATION J?
No
Yes
S307
ADD SENTENCE DATA GENERATED BY MODIFYING END OF SENTENCE DATA I TO DEFINITION OF SENTENCE END VARIATION J
GENERATE TOPIC (N-gram) WITH ALL SENTENCE DATA AS INPUT
S308
SHIFT GENERAL TOPIC (N-gram) TO APPLICATION SPECIFIC
S309
End

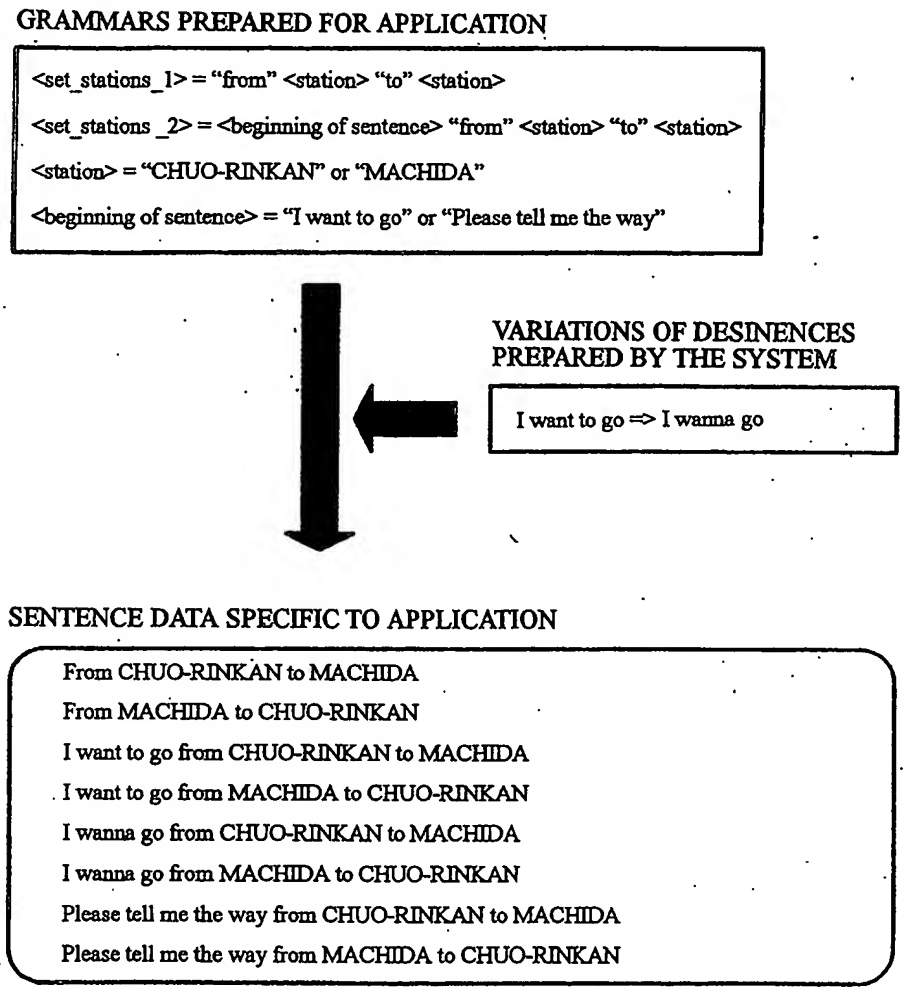
[Figure 4] (4/10)


Start
LOAD TOPIC SHIFTED TO APPLICATION SPECIFIC
S401
S402
GRAMMAR IS SPECIFIED? OR TERMINATION IS REQUESTED?
TERMINATION REQUESTED
End
GRAMMAR SPECIFIED
PERFORM RECOGNITION BY DICTATION USING TOPIC SHIFTED TO APPLICATION SPECIFIC
S403
LOAD GRAMMAR SPECIFIED BY APPLICATION AND EVOLVE IT TO CANDIDATE SENTENCES
S404
DETERMINE FINAL RECOGNITION RESULT AND RETURN IT TO APPLICATION
S405

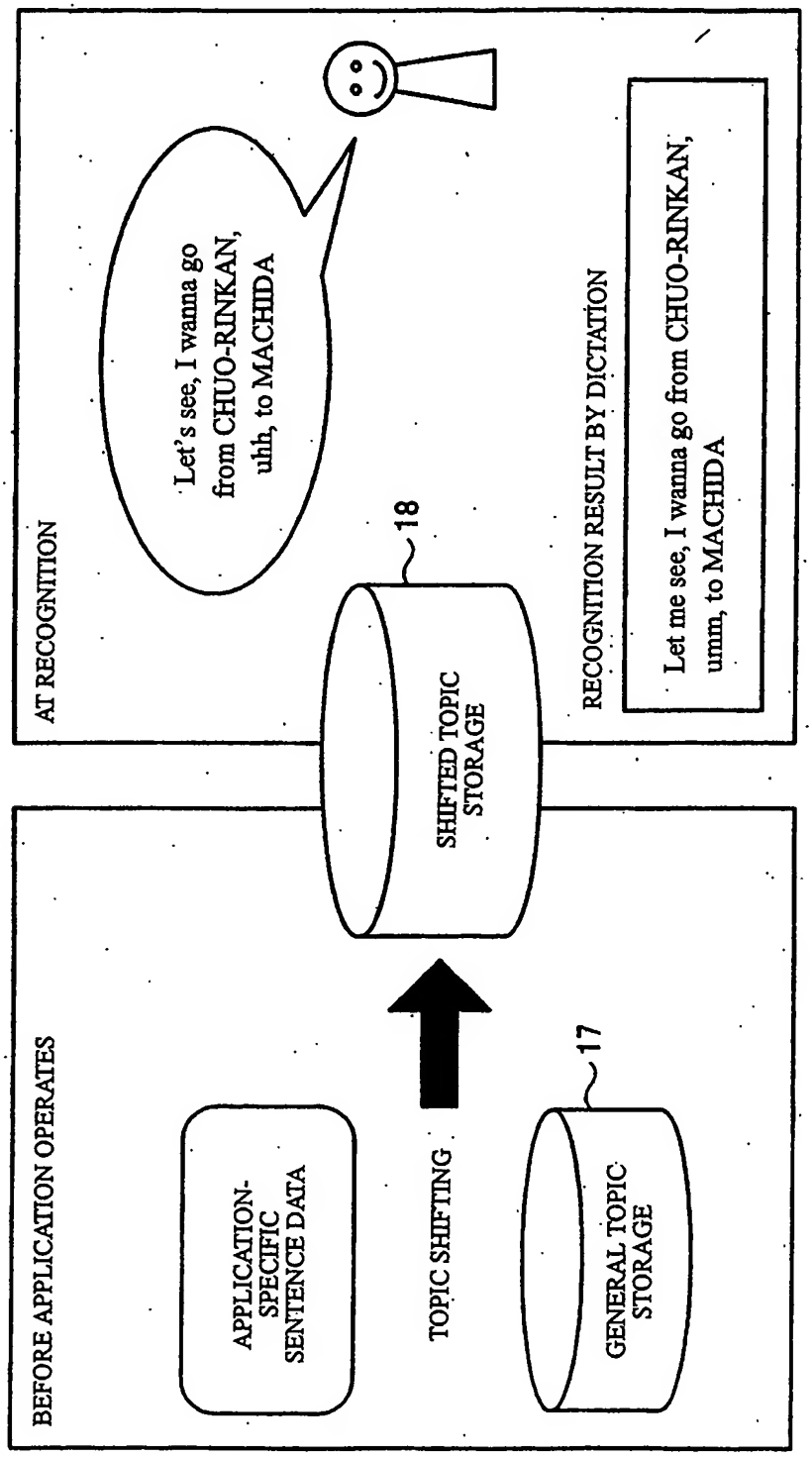
[Figure 5] (5/10)


Start
N ← THE NUMBER OF CANDIDATE SENTENCES
S411
Maxscore ← -9999
Index ← -1
S412
S413
For i = 1 to N
COMPARE RECOGNITION RESULT WITH CANDIDATE SENTENCE (i) AND CALCULATE Score(i)
S414
S415
Maxscore ≧ Score(i) ?
No
Yes
S416
Maxscore ← Score(i)
Index ← i
S417
No
Maxscore ≦ THRESHOLD TH?
Yes
S418
S419
Output ← CANDIDATE SENTENCE(Index)
Output ← "Rejected"
RETURN Output TO APPLICATION AS FINAL RECOGNITION RESULT
S420
Return

[Figure 6] (6/10)


GRAMMARS PREPARED FOR APPLICATION
<set_stations_1> = "from" <station> "to" <station>
<set_stations _2> = <beginning of sentence> "from" <station> "to" <station>
<station> = "CHUO-RINKAN" or "MACHIDA"
<beginning of sentence> = "I want to go" or "Please tell me the way"
VARIATIONS OF DESINENCES PREPARED BY THE SYSTEM
I want to go => I wanna go
SENTENCE DATA SPECIFIC TO APPLICATION
From CHUO-RINKAN to MACHIDA
From MACHIDA to CHUO-RINKAN
I want to go from CHUO-RINKAN to MACHIDA
I want to go from MACHIDA to CHUO-RINKAN
I wanna go from CHUO-RINKAN to MACHIDA
I wanna go from MACHIDA to CHUO-RINKAN
Please tell me the way from CHUO-RINKAN to MACHIDA
Please tell me the way from MACHIDA to CHUO-RINKAN

[Figure 7]


AT RECOGNITION
Let's see, I wanna go from CHUO-RINKAN, uhh, to MACHIDA
18
SHIFTED TOPIC STORAGE
RECOGNITION RESULT BY DICTATION
Let me see, I wanna go from CHUO-RINKAN, umm, to MACHIDA
BEFORE APPLICATION OPERATES
APPLICATION-SPECIFIC SENTENCE DATA
TOPIC SHIFTING
17
GENERAL TOPIC STORAGE

[Figure 8] (8/10)

GRAMMARS PREPARED IN APPLICATION

<set_stations_1> = "from" <station> "to" <station>

<set_stations _2> = <beginning of sentence> "from" <station> "to" <station>

<station> = "CHUO-RINKAN" or "MACHIDA"

<beginning of sentence> = "I want to go" or "Please tell me the way"

CANDIDATE SENTENCES GENERATED BY EVOLVING THE GRAMMARS
⇒ SENTENCES PROCESSABLE IN GRAMMAR METHOD

From CHUO-RINKAN to MACHIDA

From MACHIDA to CHUO-RINKAN

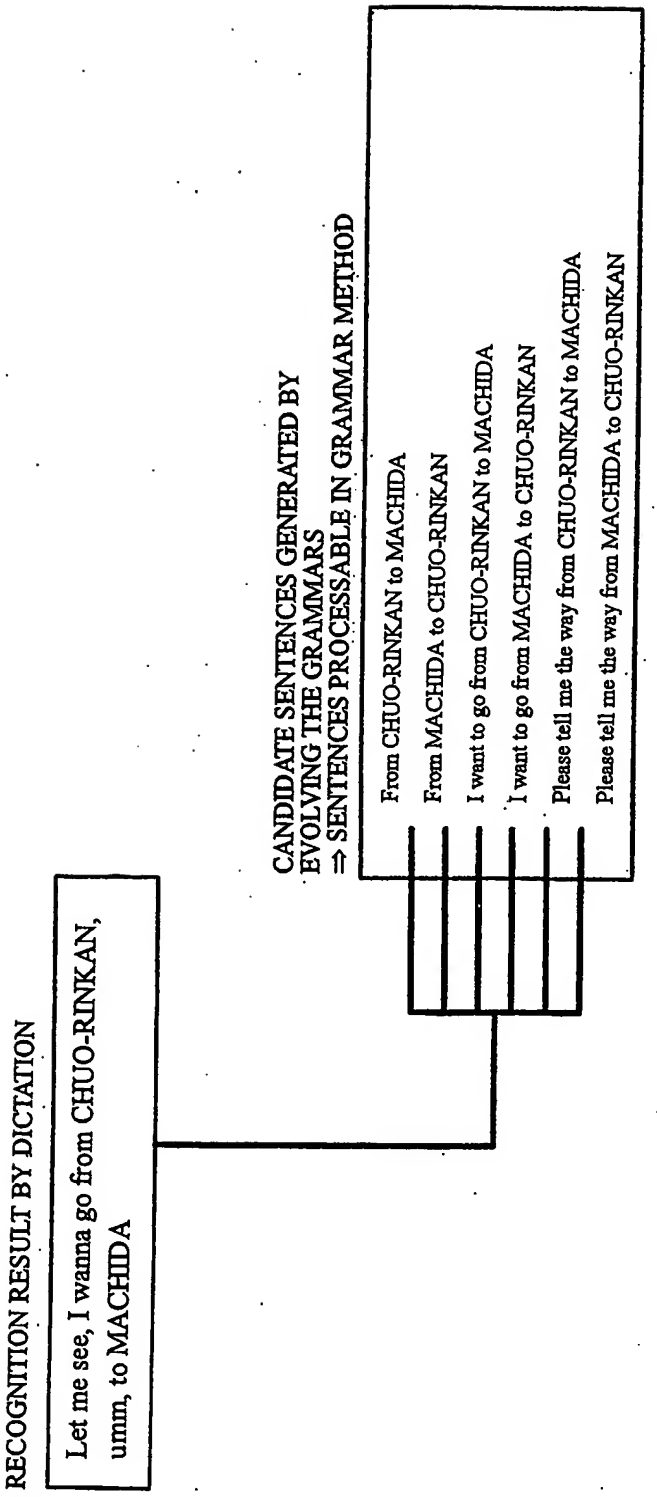
I want to go from CHUO-RINKAN to MACHIDA

I want to go from MACHIDA to CHUO-RINKAN

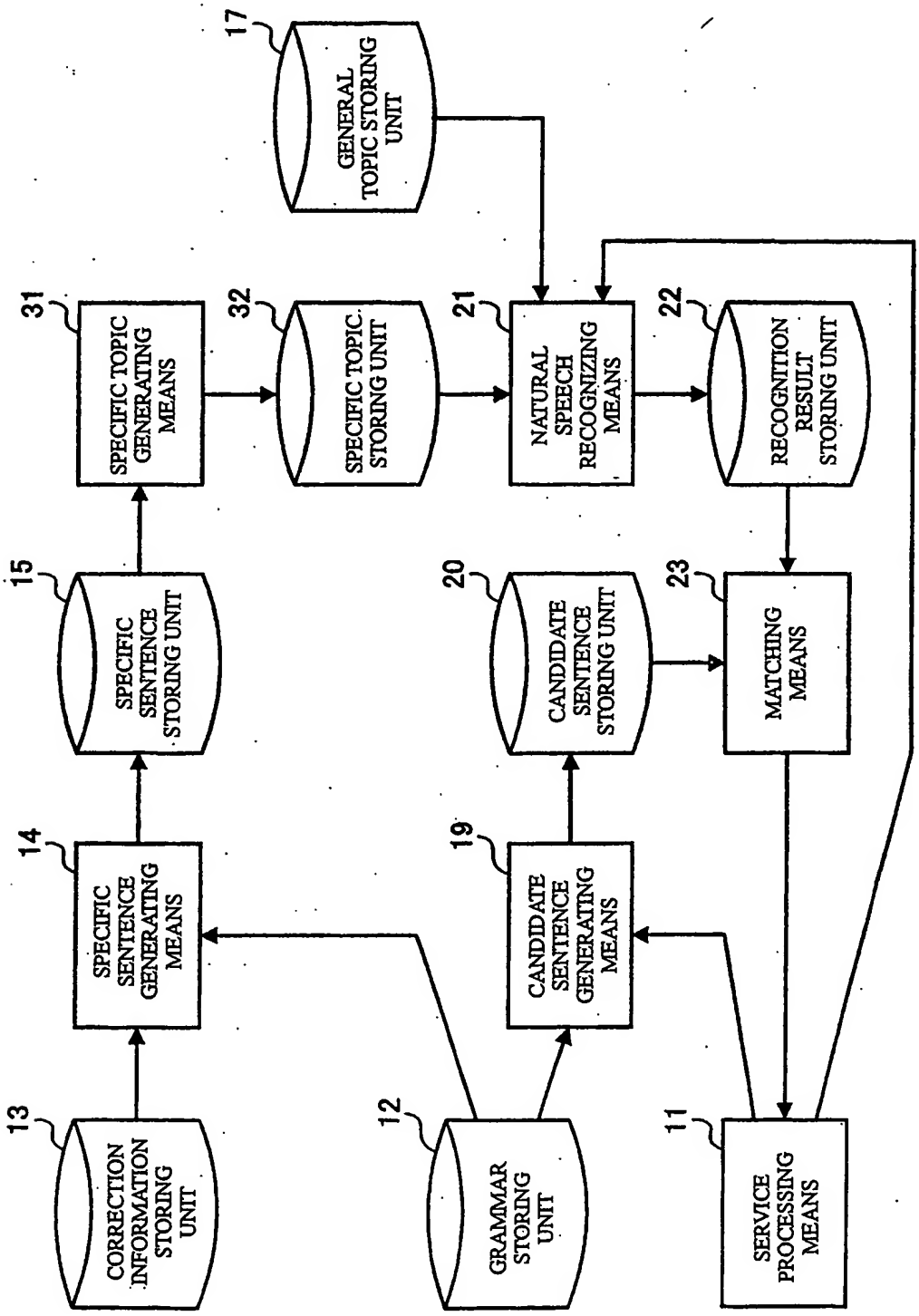
Please tell me the way from CHUO-RINKAN to MACHIDA

Please tell me the way from MACHIDA to CHUO-RINKAN

[Figure 9]


RECOGNITION RESULT BY DICTATION
Let me see, I wanna go from CHUO-RINKAN, umm, to MACHIDA
CANDIDATE SENTENCES GENERATED BY EVOLVING THE GRAMMARS
⇒ SENTENCES PROCESSABLE IN GRAMMAR METHOD
From CHUO-RINKAN to MACHIDA
From MACHIDA to CHUO-RINKAN
I want to go from CHUO-RINKAN to MACHIDA
I want to go from MACHIDA to CHUO-RINKAN
Please tell me the way from CHUO-RINKAN to MACHIDA
Please tell me the way from MACHIDA to CHUO-RINKAN

[Figure 10]


17
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SPECIFIC TOPIC GENERATING MEANS
32
SPECIFIC TOPIC STORING UNIT
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CORRECTION INFORMATION STORING UNIT
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GRAMMAR STORING UNIT
11
SERVICE PROCESSING MEANS